

Appl. No. : 10/041,767  
Filed : January 7, 2002

### REMARKS

Applicant respectfully requests the Examiner to reconsider the above-captioned application in view of the above amendments and the following remarks.

#### Claims Rejections

Claims 18-51 stand rejected under 35 U.S.C. 103(a) as unpatentable over Japanese '907 in view of Arai et al. (USPN. 5,066,171) Claims 52-54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese 245908 in view of Japanese '907. Applicant respectfully traverses the rejection of these Claims.

In rejecting the pending claims, the Examiner admits that Japanese '907 does not disclose drilling into a printed circuit board. Nevertheless, the Examiner considers it to have been obvious to use the drilling process of Japanese '907 with printed circuit boards.

Applicant respectfully disagrees. Drilling printed circuit boards, typically requires the drilling of thousands of small holes into each printed circuit board. The holes may be drilled with a drill bit having a diameter as small as 2 thousandths of an inch, which is about as small as a human hair. In addition, the printed circuit board itself is often formed from a challenging material (e.g., Teflon™). As such, Applicant submits that it would not be obvious to apply a generic drilling technique to printed circuit boards.

In support of Applicant's argument, Applicant is submitting herewith the Declaration of Kurt W. Weber. In this declaration, Mr. Weber declares that the claimed invention met a long-felt need in the are of printed circuit board drilling machines. Objective evidence or secondary considerations such as long-felt need of the claimed invention, can rebut *prima facie* obviousness. See M.P.E.P. 716. Moreover, objective evidence or secondary considerations such as long-felt need are relevant to the issue of obviousness and must be considered in every case in which they are present. M.P.E.P. 2141.01.

The relevance of long-felt need and the failure of others to the issue of obviousness depends on several factors. First, the need must have been a persistent one that was recognized by those of ordinary skill in the art. Second, the long-felt need must not have been satisfied by

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another before the invention by applicant. Third, the invention must in fact satisfy the long-felt need. M.P.E.P. 716.04

As stated in the Declaration of Kurt W. Weber, printed circuit board manufacturers have been obsessed with productivity. Paragraph 6. Accordingly, even small increases in productivity can drive sales of printed circuit board drilling machines. *Id.* To capture these sales, manufacturers of printed circuit board drilling machines are constantly seeking to increase the productivity of their printed circuit board drilling machines. *Id.* The invention as claimed in independent Claims 18, 35 and 52 and embodied in the EXCELLON HVP, 689 and Concept 129 drilling systems have met this long felt need by dramatically improving reduce drilling times by *10% to 30%*. *Id.* In many circumstances, this results in a saving of about 2 hours per board for typically “back plane type” circuit boards. This dramatic reduction in drilling times has resulted in commercial success. Paragraph 7.

#### Timeliness

Applicant respectfully submit that the Declaration of Kurt W. Weber is being timely submitted with “a first reply after final rejection for the purpose of overcoming a new ground of rejection or requirement made in the final rejection.” See M.P.E.P. 716.01. The current grounds for rejecting the pending claims were first made in the Final Office Action dated December 17, 2003.

#### Matters of Form

Clams 19, 25, 27, 47 and 52 have been amended to correct the informalities noted by the Examiner.

#### Figures

With respect to Figures 5A, 5B, 6A, and 6B, Applicant respectfully notes that these are photographs of three dimensional objects of extremely small size. As such, the pictures are focused on the center of the objects and the edges of the object are necessarily less clear as the objects moves out of the focus of the camera. Applicant notes that the Patent Office routinely accepts photographs for to illustrate features incapable of being accurately or adequately depicted by drawings, such as, for example, metallurgical micro structures and grain structures. See M.P.E.P. 608.02.

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Request for Continued Examination

Applicant notes that this Response is being filed with a Request for Continued Examination.

CONCLUSION

For the foregoing reasons, it is respectfully submitted that the rejections set forth in the outstanding Office Action are inapplicable to the present claims and Specification. Accordingly, early issuance of a Notice of Allowance is most earnestly solicited.


The undersigned has made a good faith effort to respond to all of the rejections in the case and to place the claims in condition for immediate allowance. Nevertheless, if any undeveloped issues remain or if any issues require clarification, the Examiner is respectfully requested to call Applicant's attorney in order to resolve such issue promptly.

Respectfully submitted,

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